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Subject: Re: GRIDDATA woes

Posted by [Kenneth P. Bowman](#) on Wed, 05 Mar 2008 03:02:39 GMT

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> Thanks Bill and Ken,

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- > I had scoured the c.l.i-p archives but never used "regridding" keyword  
> which, in hindsight, seems the perfect keyword. The perils of keyword  
> searches...
- >
- > The discussion on INTERPOLATE that you reference (see <http://tinyurl.com/38mr7k>)  
> is the first time I have ever "gotten" INTERPOLATE. Thank you! The  
> function has always felt so awkward because the units x and y are in  
> dimensions - it always left me feeling a little disconnected from the  
> physical meaning. I'll get over it.
- >
- > For my purposes the INTERPOLATE method is probably just the ticket,  
> but I do have this lingering question about the fact that the input  
> values are drawn from the surface of a sphere. What are the  
> conditions under which I do need to worry about it? Is it the spacing  
> between the input values? The extend over the sphere? Some  
> combination?

Remember, interpolation is an approximation. You make assumptions about the behavior of a function between known (tabulated) points. Bilinear interpolation is the crudest possible interpolation scheme.

Doing bilinear interpolation on a sphere is also an approximation, as the bilinear interpolator is strictly defined in Cartesian coordinates.

If I remember correctly, though, your grid is rather finely spaced. On that scale it is probably a very good approximation to assume that the world is flat. If you are worried about errors at that level, or you have a better idea of the actual shape of your function, then you could use a higher-order interpolator. That would depend on your purpose. It is a good idea to think about these things, but then I'm not doing geodesy. :-)

Ken

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